IN THE CLAIMS:

1   1. – 19. (Cancelled)

1   20. (Previously Presented) A method for allocating a spare disk to replace a failed disk in

2   a network storage system, comprising:

3   maintaining a plurality of volumes in the network storage system, each volume

4   associated with a set of disk storage units;

5   maintaining a plurality of spare disks in the network storage system;

6   attempting to determine the best spare disk by selecting those disks from the plu-

7   rality of spare disks which meet at least one rule;

8   replacing the failed disk with the best spare disk;

9   in the event that no spare disk meets the at least one rule, selecting a spare disk

10   which violates the at least one rule as a selected disk; and

11   notifying an administrator that the selected spare disk violates the rule.

21. -27. (Cancelled)

1   28. (Previously Presented) A network storage system, comprising:

2   means for maintaining a plurality of volumes in the network storage system, each

3   volume associated with a set of disk storage units;

4   means for maintaining a plurality of spare disks in the network storage system;

5   means for attempting to determine a best spare disk by selecting those disks from

6   the plurality of spare disks which meet at least one rule;

7   means for replacing the failed disk with the best spare disk;

1   in the event that no spare disk meets the at least one rule, means for selecting a

2   spare disk which violates the at least one rule as a selected disk; and

3   means for notifying an administrator that the selected spare disk violates the rule.

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1   29. – 33. (Cancelled)

1   34. (Previously Presented) A file server in a network storage system, comprising:

2   a storage adapter to connect to a plurality of disk storage units in the network

3   storage system;

4   an operating system to maintain a plurality of volumes, each volume associated

5   with a set of disk storage units, the set of disk storage units selected from the plurality of

6   disk storage units;

7   the operating system maintaining a plurality of spare disks units selected from the

8   plurality of disk storage units;

9   the operating system choosing a best spare disk of the plurality of spare disks to

10   replace a failed disk, the failed disk associated with any volume of the network storage

11   system;

12   the operating system attempting to determine a best spare disk by selecting those

13   disks from the plurality of spare disks which meet at least one rule;

14   the operating system replacing the failed disk with the best spare disk;

15   in the event that no spare disk meets the at least one rule, the operating system se-

16   lecting a spare disk which violates the at least one rule as a selected disk: and

17   the operating system notifying an administrator that the selected spare disk vio-

18   lates the rule.

1   35. – 38. (Cancelled)

1   39. (Previously Presented) A method for allocating a spare disk to replace a failed disk in

2   a network storage system, comprising:

3   maintaining a plurality of volumes in the network storage system, each volume

4   associated with a set of disk storage units;

5   maintaining a plurality of spare disks in the network storage system;

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6   choosing a best spare disk of the plurality of spare disks to replace a failed disk,

7   the failed disk associated with any volume of the network storage system, wherein the

8   best spare disk is chosen based upon a comparison of the speed of the spare disks and the

9   failed disk; and

10   replacing the failed disk with the best spare disk.

1   40. – 44. (Cancelled)

1   45. (Previously Presented) A computer implemented method for allocating a spare stor-

2   age device to replace a failed storage device in a network storage system. comprising:

3   identifying a set of spare storage devices in the network storage system; and

4   selecting a particular spare storage device of the set of spare storage devices to re-

5   place the failed storage device, the particular spare storage device selected using a size

6   policy in which preference is given to a spare storage device with minimum storage space

7   in excess of the storage space of the failed disk.

1   46. (Previously Presented) A computer implemented method for allocating a spare stor-

2   age device to replace a failed storage device in a network storage system, comprising:

3   identifying a set of spare storage devices in the network storage system; and

4   selecting a best spare storage device of the set of spare storage devices to replace

5   the failed storage device, the best spare storage device selected using a speed policy in

6   which preference is given to a spare storage device with a speed closest to that of the

7   failed disk.

1   47. (Previously Presented) The method of claim 46 wherein the speed is a rotation

2   speed.

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1   48. (Previously Presented) The method of claim 46 wherein the speed is a data read

2   speed.

1   49. (Previously Presented) The method of claim 46 wherein the speed is a data write

2   speed.

    50. (Cancelled)

1   51. (Previously Presented) A computer readable medium comprising executable pro-

2   gram instructions for allocating a spare storage device to replace a failed storage device

3   in a network storage system, the executable program instructions adapted for:

4   identifying a set of spare storage devices in the network storage system; and

5   selecting a particular spare storage device of the set of spare storage devices to re-

6   place the failed storage device, the particular spare storage device selected using a size

7   policy in which preference is given to a spare storage device with minimum storage space

8   in excess of the storage space of the failed disk.

1   52. (Previously Presented) A computer readable medium comprising executable pro-

2   gram instructions for allocating a spare storage device to replace a failed storage device

3   in a network storage system, the executable program instructions adapted for:

4   identifying a set of spare storage devices in the network storage system; and

5   selecting a best spare storage device of the set of spare storage devices to replace

6   the failed storage device, the best spare storage device selected using a speed policy in

7   which preference is given to a spare storage device with a speed closest to that of the

8   failed disk.

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1   Please add new claims 53 *et al.*

1   53. (New) The method of claim 20, wherein the best spare disk is a highest-ranked disk.

1   54. (New) The method of claim 53, wherein the highest-ranked disk is determined by

2   meeting one or more rules.

1   55. (New) The method of claim 54, wherein the one or more rules are hard-coded and

2   designed to ensure data integrity by providing redundancies within data transfer path.

1   56. (New) The method of claim 20, wherein the best spare disk is randomly selected from

2   a plurality of highest ranked disks.

1   57. (New) The method of claim 20, wherein the at least one rule is hard-coded and de-

2   signed to ensure data integrity by providing redundancies within data transfer path..

1   58. (New) The network storage system of claim 28, wherein the best spare disk is a high-

2   est-ranked disk.

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1   59. (New) The network storage system of claim 58, wherein the highest-ranked disk is

2   determined by meeting one or more rules.

1   60. (New) The network storage system of claim 59, wherein the one or more rules are

2   hard-coded and designed to ensure data integrity by providing redundancies within data

3   transfer path.

1   61. (New) The network storage system of claim 28, wherein the best spare disk is ran-

2   domly selected from a plurality of highest ranked disks.

1   62. (New) The network storage system of claim 28, wherein the at least one rule is hard-

2   coded and designed to ensure data integrity by providing redundancies within data trans-

3   fer path.

1   63. (New) The file server of claim 34, wherein the best spare disk is a highest-ranked

2   disk.

1   64. (New) The file server of claim 63, wherein the highest-ranked disk is determined by

2   meeting one or more rules.

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1   65. (New) The file server of claim 64, wherein the one or more rules are hard-coded and

2   designed to ensure data integrity by providing redundancies within data transfer path.

1   66. (New) The file server of claim 34, wherein the best spare disk is randomly selected

2   from a plurality of highest ranked disks.

1   67. (New) The file server of claim 34, wherein the at least one rule is hard-coded and de-

2   signed to ensure data integrity by providing redundancies within data transfer path.

1   68. (New) The method of claim 39, wherein the best spare disk is a highest-ranked disk.

1   69. (New) The method of claim 39, wherein the best spare disk is randomly selected from

2   a plurality of highest ranked disks.

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